

What Is Claimed Is:

1. A sun protection device having a plurality of segments disposed apart in parallel in longitudinal direction and borne rotatable about their longitudinal axis and each provided with a segment top side, on which a plurality of optical concentrating structural elements of at least partially transparent dielectric material, so-called CPCs (compound parabolic concentrators) is provided, each having a surface of incidence (LE) and a planar or curved receiving surface (EF) which are oriented with said receiving surface (EF) directed toward said segment top side,
wherein said segment top side is shaped at least partially curved or edged transverse to its longitudinal expansion,
said segment top side is designed reflecting or opaque, and
said CPCs are disposed with their receiving surface (EF) directly adjacent to said segment top side or at least via a coupling layer or at a distance facing said segment top side.

2. The sun protection device according to claim 1,
wherein said CPCs are disposed side by side or in a translation invariant manner on said segment top side in longitudinal direction to the longitudinal expansion thereof and one behind the other in the curved transverse direction in at least one continuous group in such a manner that all said CPCs of said group are constructed identically and
that said incidence surfaces (LE) and receiving surfaces (EF) of said CPCs of said group are oriented based on the curvature behavior of said segment top side.

3. The sun protection device according to claim 1,
wherein said CPCs are disposed side by side or in a translation invariant manner on said segment top side in longitudinal direction to the longitudinal expansion thereof and one behind the other in the curved transverse direction in at least one continuous group in such a manner that at least two said CPCs of said group disposed directly behind each other are disposed with identical orientation independent of the curvature behavior of said segment top side.

4. Theun protection according to claim 3,
wherein said CPCs of said group are all designed identically.
5. The sun protection device according to claim 3,
wherein said CPCs of said group are designed differently, and the incidence surfaces of said CPCs form a surface running in parallel to said segment top side.
6. The sun protection device according to one of the claims 2 to 5,
wherein said segment top side is provided with groups of CPCs which are designed according to one of the claims 2 to 5.
7. The sun protection device according to one of the claims 1 to 6,
wherein said CPCs are each provided with an acceptance angle range (AB) in which rays of light penetrate said CPC via said incidence surface (LE) and can be concentrated by way of total reflection upon said receiving surface (EF), and said acceptance angle range (AB) of said CPCs is selected based on the curvature behavior of said segments in transverse direction in such a manner that said acceptance angle ranges (AB1 and AB2) of two adjacent said CPCs lying one behind the other (CPC1 and CPC2) overlap.
8. The sun protection device according to one of the claims 1 to 7,
wherein said segment top sides of a group of adjacent segments are oriented in the same direction.
9. The sun protection device according to claim 8,
wherein at least two groups of adjacent segments are provided, and the segment top sides of the segments in the first group have uniform orientation differing from the uniform orientation of the segment top sides of the segments in the second group.
10. The sun protection device according to one of the claims 1 to 9,
wherein the segments all have a diffuse-light-scattering and/or diffuse-light-absorbing segment underside.

11. The sun protection device according to claim 10,
wherein said segment underside is provided with a diffuse-light-scattering structured foil.

12. The sun protection device according to one of the claims 1 to 11,
wherein said CPCs are designed as a continuous layer structure which can be placed on said segment top side.

13. The sun protection device according to claim 12,
wherein said layer structure is designed as a type foil which can be glued on or otherwise attached on said segment top side.

14. The sun protection device according to one of the claims 1 to 13,
wherein said CPCs each have a periphery which is provided with a reflecting coat and connects said incidence surface (LE) and said receiving surface (EF).

15. The sun protection device according to claim 14,
wherein said receiving surface (EF) is provided with a reflecting coat.

16. The sun protection device according to one of the claims 1 to 15,
wherein said segments are disposed horizontally inside an opening in the facade of a building.

17. The sun protection device according to claim 16,
wherein the segment top sides are oriented facing the sun radiation,
said CPCs are disposed in the region of the longitudinal edges of said segments facing the sun radiation in such a manner that the sunlight falling upon said CPCs is largely "retro"-reflected, and
said CPCs disposed in the region of the longitudinal edges facing away from the sun radiation face in the direction of the vertically adjacent above-lying segment underside.

18. The sun protection device according to one of the claims 1 to 17,
wherein said coupling layer is designed transparent or reflecting.

19. The sun protection device according to one of the claims 1 to 18, **wherein** said coupling layer completely or partially fills the intermediate spaces between adjacent said CPCs.
20. Use of the sun protection device according to one of the claims 1 to 19, as a type segmented blind which is provided in the intermediate space between panes of multiplane glazing.